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Commonwealth of Pennsylvania
Department of Environmental Resources
Environmental Cleanup Program
December 08, 1995

Subject: Boarhead Farms Site, Bucks County Remedial Investigation Report
To: Dave Ewald: HSCP Project Officer
From: Bruce McClain: Hydrogeologist

I have completed my review of Boarhead Farms Site Remedial Investigation Report, dated October 2, 1995. The following comments must be sent to EPA for consideration.

Specific Comments

Page 2-43 Section 2.8.2.1 Seismic Refraction Survey.

Figure 2-3 does not show the Seismic lines that section states are present in this figure. This figure illustrates the results of a magnetic survey. I could not find any figure with the Seismic lines shown as stated in this section.

Page 2-44 Section 2.8.2.2 Well Installation

The Thorpe and Brown document is not listed within the list of references. This document must be listed in the list of references if it is both cited and used for calculations and information within the body of the report.

Page 2-49 Section 2.8.2.4 Aquifer Insitu Hydraulic Conductivity Testing

The hydraulic data analysis methods, from Bouwer and Rice, are used in the report, yet CH2M Hill does not list their report in the List of references. If CH2M Hill is going to use this information then the Bouwer and Rice document, then it must be found in the list of references.

Page 2-55 Section 2.8.3.4 Bore Hole Geophysics.

I never received for my review and comment the USGS report on geophysical surveys of the Boarhead wells. Additionally, this report is not provided as part of the Remedial Investigation Report. This work was part of the RI/FS investigation, then CH2M Hill must include the USGS's report with in the body of the RI report or as part of appendices.

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Page 3-23 Section 3.5.1 Shallow Ground water System (Overburden, Top of Rock) 2nd Paragraph

CH2M Hill cited and compared a USGS publication by McManus and Rowland in the report. This publication is not found the list of References; please list this document.

Page 4-66 Section 4.3.1.1 Discussion Third Paragraph

The detected concentration of chromium, found at Keystone Excavating, is well above the Crest model levels.

Page 5-8 Table 5-3 Fate and Transport

The pH and Specific conductivity could be plotted on a site map to determine the distribution of pH levels and Specific conductivity. These parameters can be compared to the distribution of site related contaminants found in the monitoring wells.

General comments

- 1) Site maps that indicate the distribution of site related contaminants should be included. These maps should have isoconcentration lines would provide some indication of plume size and direction of movement from the site.
- 2) Several reports were written by the USGS for this site and were not included in the report; nor were these reports listed in the references at the end of the report. These reports should be included in this report as part of the appendices or with in the body of RI report.
- 3) The USGS report for the geophysical well logging was not provided for the department's review and comment. There must be some justification for this over site by CH2M Hill and the EPA.

cc G. Danyliw
R. Day-Lewis
R. Zang
A. Tremont

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